LEVICH, V.G.; KHAYKIN, B.I.; KIR'YANOV, V.A.

Faraday impedance for reversible electrode processes proceeding according to the pattern of hydrogen catalytic evolution. Dokl. AN SSSR 139 no.4:925-928 Ag '61. (MIRA 14:7)

1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent AN SSSR (for Levich).
(Polarization (Electricity)) (Electromotive force)

LEVICH, V.G.; KHAYKIN, B.I.; MAZRANOVSKIY, S.G.

Effect of the double layer on the polarographic catalytic
hydrogen space waves. Dokl.AN SSSR 145 no.3:605-608 Jl '62.
                                                    (MIRA 15:7)

1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Levich).
          (Catalysis)   (Electromotive force)

LEVICH, V.G.; KHAYKIN, B.I.

Irreversible polarographic catalytic space waves of
hydrogen. Dokl. AN SSSR 147 no.1:146-149 N '62.
                                            (MIRA 15:11)
1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Levich).
        (Polarography)   (Catalysis)   (Hydrogen)

LEVICH, V. G.; KHAYKIN, B. I.; GRAFOV, B. M.

    Faraday's heterodynation. Dokl. AN SSSR 153 no. 6:1374-
    1377 D '63.   (MIRA 17:1)

    1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent
       AN SSSR (for Levich).

LEVICH, V. G.; KHAYKIN, B. I.; GRAFOV, B. M.

"Two new methods of investigation of fast electrode processes."

report presented at 15th Mtg, Intl Comm of Electrochemical Thermodynamics & Kinetics, London & Cambridge, UK, 21-26 Sep 1964.

Inst of Electrochemistry, AS USSR.

KHAYKIN, B.I.; FEOKTISTOV, L.G.

Limiting current in the case of deactivation of the electro-
active substance by the product of electrochemical reaction.
Zhur. fiz. khim. 38 no.3:547-550 Mr '64.   (MIRA 17:7)

1. Institut elektrokhimii AN SSSR.

LEVICH, V.G.; GRAFOV, B.M.; KHAYKIN, B.I.

Second harmonic phase of a variable potential and the transfer
coefficient of rapid electrochemical reactions. Dokl. AN
SSSR 154 no.1:200-202   Ja'64.   (MIRA 17:2)

1. Institut elektrokhimii AN SSSR. 2. Chlen-korrespondent
AN SSSR (for Levich).

KHAYKIN, B.I.; ZOLOTOVITSKIY, Ya.M.; THDORADZE, G.A.

Faradic impedance of reversible catalytic processes. Elektro-
khimiia 1 no.1:23-30 Ja '65.   (MIRA 18:5)

1. Institut elektrokhimii AN SSSR.

ZOLOTOVITSKIY, Ia.M.; TEODORADZE, G.A.; KHAYKIN, B.I.

    Faradaic impedance of reversible catalytic processes. Part 2:
    Catalytic evolution of hydrogen from solutions of pyridine,
    α-picoline, α,α'-lutidine, and α,γ-lutidine. Elektrokhimiia
    1 no.2:130-137 F '65.   (MIRA 18:6)

    1. Institut elektrokhimii AN SSSR.

LEVICH, V.G.; KHAYKIN, B.I.; BELOKOLOS, Ye.D.

Establishment of the adsorption equilibrium on flat and dropping
electrodes and the irreversible electrochemical conversion of
adsorbed substances. Elektrokhimiia 1 no.10:1273-1279 O '65.

(MIRA 18:10)

1. Institut elektrokhimii AN SSSR.

KHAYKIN, B.P., elektromekhanik.

Shortcomings to be corrected. Avtom., telem. 1 sviaz' 2
no.10:42 O '58.   (MIRA 11:10)

1.Vyborgskoy distantsii signalizatsii i svyazi Oktyabr'skoy dorogi.
            (Railroads--Communication systems)

TARNOVSKIY, I.Ya.; SMIRNOV, V.K.; KHAYKIN, B.Ya.

    Estimate of power parameters for periodic rolling with turns.
    Izv. vys. ucheb. zav.; chern. met. 4 no.11:86-93 '61. (MIRA 14:12)

    1. Ural'skiy politekhnicheskiy institut.
                     (Rolling mills)

KHAYKIN, B.Ye. (Yerevan)

Necessity of building multi-machine systems for processing
information. NTI no.2:36-37 '63.   (MIRA 16:11)

MAKAYEV, S.V., kand. tekhn. nauk; STAROSELETSKIY, M.I., inzh.;
     KHAYKIN, B.Ye., inzh.

Using statistical methods for the investigation of techno-
logical processes in metallurgy. Stal' 24 no.1:89-92
Ja '64.   (MIRA 17:2)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
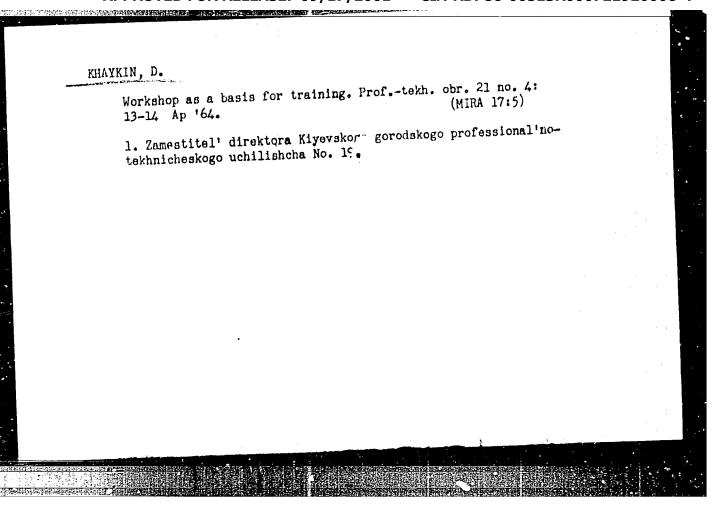
KHAYKIN, B.Ye.; TARNOVSKIY, I.Ya.

    Power criterion of resistance in the theory of plastic working
    of metals. Izv. vys. ucheb. zav.; chern. met. 8 no.2:77-80 '65.
                                                    (MIRA 18:2)
    1. Ural'skiy politekhnicheskiy institut.

KHAYKIN, B.Ye.; TARNOVSKIY, I.Ya.; LYASHKOV, V.B.

Totality of criteria characterizing the shape of the center of deformation during rolling. Izv. vys. ucheb. zav.; chern. met. 8 no.7:102-107 '65.   (MIRA 18:7)

1. Ural'skiy politekhnicheskiy institut.

KHAYKIN, D.

Workshop as a basis for training. Prof.-tekh. obr. 21 no. 4:
13-14 Ap '64.   (MIRA 17:5)

1. Zamestitel' direktora Kiyevskor~ gorodskogo professional'no-
tekhnicheskogo uchilishcha No. 1S.

KHAYKIN, E.L.

Investigating the wear of the main parts of the hydraulic distributor in the D-183 scraper. Trudy TIIIMSKH no.19:113-117 '62.   (MIRA 17:1)

KHAYKIN, G.; BAYUSHKIN, A.

Our labor productivity is growing. Sel'.stroi. 16 no.2:21-22
F '62.
(MIRA 15:12)

1. Predsedatel' soveta Kalininskoy oblastnoy mezhkolkhoznoy
organizatsii (for Khaykin). 2. Glavnyy inzhener Kalininskoy
oblastnoy mezhkolkhoznoy organizatsii (for Bayushkin).
(Construction industry—Labor productivity)

KHAYKIN, G.I.

Development of stomatological aid in Kokchetav Province,
Virgin Territory. Stomatologiia 42 no.2:81-82 Mr-Ap'63
(MIRA 17:3)

1. Glavnyy stomatolog Kokchetavskoy oblasti.

KHAYKIN, G.I.

       Use of plastic suture in fractures of the mandible. Stomatologiia 40
       no.3:57-58 My-Je '61.   (MIRA 14:12)

    1. Iz Kokchetavskoy oblastnoy bol'nitsy (glavnyy vrach L.K.Kirpo).
           (JAWS—FRACTURE)   (SUTURES)

KHAYKIN, G.I.

Treatment of diseases of the mouth by electrophoresis of antibiotics.
(MIRA 15:2)
Zdrav. Kazakh. 21 no.5:30-31 '61.

1. Iz Kokchetavskoy oblastnoy bol'nitsy.
(MOUTH_DISEASES)   (ELECTROPHORESIS)   (ANTIBIOTICS)
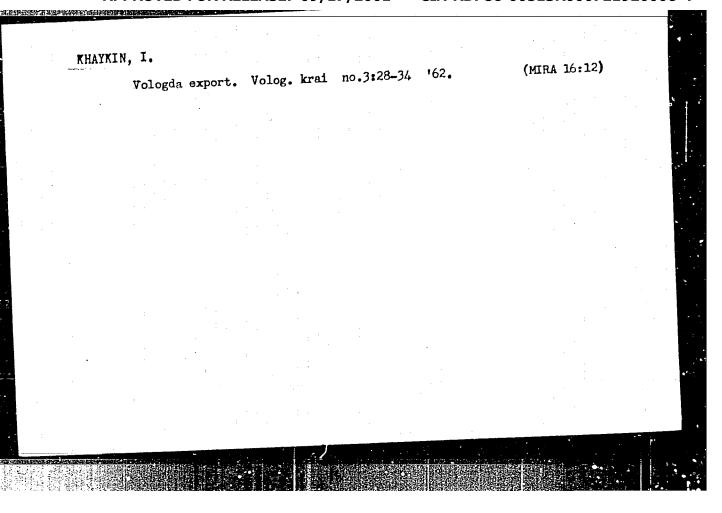
KHAYKIN, G.I.; ZAKHURDAYEV, V.P.

Osteotomy of the mandible with simultaneous plastic repair
of perioral defects. Stomatologiia 43 no.1:94-95 Ja-F'64
(MIRA 17:4)

1. Kokchetavskaya oblastnaya bol'nitsa (glavnyy vrach L.K.
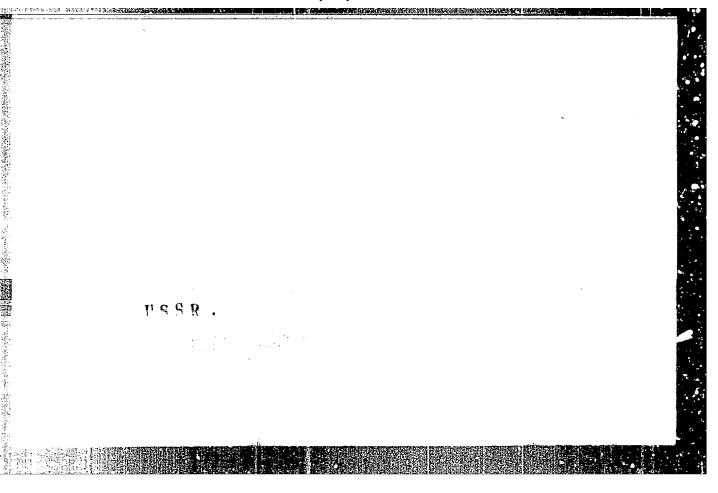Kirpo) i TSentral'nyy institut usovershenstvovaniya vrachey.

PEREPECHENKO, P.; SOKOLOV, G.; AVDOSHENKO, A., red.; PEREPECHENKO,P.,
red.; POLETAYEV, A., red.; RASTORGUYEVA, N., red.; SOKOLOV,G.,
red.; KHAYKIN, I., red.; KHOKHOLKOV, N., red.; SHVETSOVA,
R.V., red.; SOKOLOVA, S.I., tekhn. red.

[Excursions through native territory; routes and discus-
sion materials] Ekskursii po rodnomu kraiu; marshruty i ma-
terialy dlia besed. Vologda, Vologodskoe knizhnoe izd-vo,
1963. 255 p.   (MIRA 17:1)

1. Vologda. Gosudarstvennyy pedagogicheskiy institut.

KHAYKIN, I.

      Vologda export. Volog. krai no.3:28-34 '62.

                                        (MIRA 16:12)

USSR .

AUTHOR: Khaykin, I.B. (Engineer)   SOV/96-58-10-5/25

TITLE: An investigation of the effectiveness of the tail-end heating
               surfaces in a direct-flow boiler. (Issledovan'ye effektivnosti raboty
               khvostovykh poverkhnostey nagreva pryamotochnogo kotla)

PERIODICAL: Teploenergetika, 1958, No.10, pp. 18-22 (USSR)

ABSTRACT: Direct-flow boiler type 67-2-SP has an output of 230 tons/hour at a
               pressure of 100 atms with a superheat temperature of 510°C and feed
               water temperature of 215°C. It is designed for liquid slag removal
               and is of the inverted U arrangement (See Fig.1.). Tests were made
               of the effectiveness of the tail-end heating surfaces of the first
               example of this type of boiler-burning Donets lean coal and Stavropol'
               natural gas. The arrangement of the tail-end heating surfaces, such
               as the water economiser and the air heater is described. The most
               important data relating to these parts of the boiler are tabulated.
               Fuel analysis are given. The instrumentation used during the tests
               is described, also the gas analyses procedure. The results of
               investigation of the lower stage of the air heater are given in
               Figs.2. - 4. The relationship between the utilisation coefficients
               of this stage of the air heater and the gas velocity when burning both
               dust and gas are plotted in Fig.2. The relationship between the
               utilisation coefficient and the duration of operation on pulverised
Card 1/3   fuel is graphed in Fig.3 The coefficient of utilisation gradually

An investigation of the effectiveness of the tail-end heating   SOV/96-58-10-5/25
surfaces in a direct-flow boiler.

diminishes to a steady value. The absolute values of the
coefficient were somewhat less than values calculated by the
standard method. The relationship between the utilisation
coefficient of the air heater and the duration of operation of a
dirty boiler on gas is given in Fig.4. The air heater becomes
somewhat cleaned-up in course of time, improving the coefficient by
about 2%. Test data for the upper stage of the air heater are also
given in Figs.2. - 4. The results show that the need for effective
soot blowing is greater for the upper than for the lower stage of
the air heater. Data for the lower stage of the water economiser
are given graphically in Figs.5. - 7. The relationships between the
actual and calculated contamination factors, as a function of gas
velocity when operating a clean boiler on pulverised fuel, are in
Fig.5. The factors are appreciably reduced by increasing the gas
speed from 4.2 - 5.3 m/sec. On the other hand, graphs given in Fig.6.
show that there is some increase in the factor when the boiler has
been burning pulverised fuel for a time. The relationship between
the contamination factor and duration of operation for a dirty boiler
burning gas is plotted in Fig.7. It will be seen that the water
economiser surface is somewhat cleaned up by burning gas. Data for
the upper stage of the water economiser are also given in Figs.5. - 7.

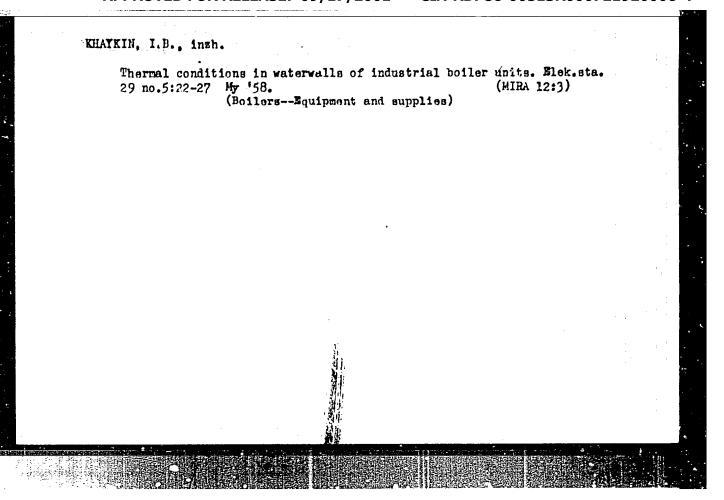Card 2/3   and are briefly discussed. It is concluded that the experimental

An investigation of the effectiveness of the tail-end heating   SOV/96-58-10-5/25
surfaces in a direct-flow boiler,

       values of the utilisation coefficient of the lower stage of the air
       heater fall below those calculated by the recommended standard method
       when pulverised fuel and gas are burned. The utilisation coefficients
       of the upper and lower stages of the air heater are practically
       identical when pulverised fuel is burnt; but when burning gas, the
       coefficients for the upper stage exceed those for the lower and
       surpass the standard values. On either fuel, the actual values of the
       contamination coefficients for the lower stage of the water economiser
       exceed the standard values, but for the upper stage, the opposite is
       the case. There are 7 figures and 1 table.

ASSOCIATION: Moscow Division of the Central Boiler Turbine Institute (MO....)
       TsKTI)

Card 3/3

KHAYKIN, I.B., inzh.

Thermal conditions in waterwalls of industrial boiler units. Elek.sta.
29 no.5:22-27 My '58.   (MIRA 12:3)
                  (Boilers--Equipment and supplies)

SOV/96-59-8-11/27

AUTHOR: Khaykin, I.B., Engineer

TITLE: Natural Circulation During Variable Conditions

ABSTRACT: It is often necessary to change the operating conditions of
            boilers quite suddenly, and the operating staff need to
            know the maximum permissible rates of change of pressure
            and load that can be permitted without upsetting circulation
            in the boiler tubes. The questions that arise are not
            answered fully by existing published work, though useful
            data on natural circulation during variable operating con-
            ditions of large industrial boilers were given in a previous
            article by the same author published in Teploenergetika
            Nr 10, 1957. The present article supplements and develops
            the previous one, to which frequent reference is made.
            Circulation may be studied under variable operating con-
            ditions if it is accepted that circulation is related to
            the resultant steam load as defined by equation (1); that
            is, it is an algebraic summation of the steam generated as
Card 1/5   a result of heat evolution in the furnace, of heat stored

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Natural Circulation During Variable Conditions

in the working substance and metal of the boiler, and of
changes in furnace conditions. On this basis a check may
be made of the reliability of circulation provided that the
pressure changes do not cause boiling in the downflow tubes.
There is a criterion of reliability of circulation during a
loss of pressure that might cause boiling in the down flow
tubes. It is the limiting permissible steam content at the
outlet from the down flow tubes which does not interrupt
the circulation. Once this limiting steam content has been
determined experimentally the formulae given in this article
may be used to determine the limiting rate of pressure drop.
Tests made on a boiler type PK-10p to check the assumptions
and to establish limiting rates of pressure change were
described in the previous article. Expression (2) for the
steam content by weight in a down flow tube is derived from
the previous article. On substituting appropriate experi-
mental data in this formula it is concluded that a rate of
change of pressure of 18 atms/min gives the limiting steam
content of 1.4%. It is recommended that steam contents
Card 2/5 higher than this should not be permitted in the downflow

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Natural Circulation During Variable Conditions

tubes. Expression (3) is then derived for the permissible
rate of change of pressure with different rates of flow in
the downflow tubes and a curve plotted from this formula is
given in Fig 1. The steam content by weight of 1.4% cor-
responds to a steam content by volume of 15%, which should
be considered as a maximum value for boiler sets of any
pressure. Expression (4) is thereby established for the
maximum rate of loss of pressure. Curves of permissible
rate of loss of pressure as function of rate of flow in the
downflow tubes derived from this formula are plotted in Fig 2.
The maximum rate of pressure increase is obtainable from a
graph published in the previous article. A relationship be-
tween this rate and the thermal loading on the least heated
tubes is plotted in Fig 3 for a particular case. Other
practical limitations are introduced and finally expression
(6) is derived for the maximum rate of pressure increase.
The influence of the level of water in the drum on the
permissible rates of pressure increase and decrease is then
briefly considered. The curves in Fig 4 show that the
Card 3/5 maximum rate of pressure drop recommended in this article is

Natural Circulation During Variable Conditions

much higher than that recommended by Peterson; this is because
some steam formation is permitted in the downflow tubes. The
recommended rates of pressure change are compared with
published experimental data in Fig 5 and it will be seen
that the agreement is good. Fig 6 plots the rate of fall
of pressure with increase in steam load. with furnace con-
ditions unchanged, for the main types of Soviet boilers. Con-
versely Fig 7 shows graphs of their rate of pressure drop
when the rate of heat evolution in the furnace is reduced
with a constant steam load. It is considered that circula-
tion will be upset only if a steam load of more than 60% of
the rated load is applied without any change occurring in
furnace conditions, or if the heat evolved is reduced by 75%
without the steam load changing. Such extreme changes are
not observed in practice. Circulation might be upset if all
the burners were extinguished simultaneously, but the con-
sequences would not be serious in this case. Graphs relating
the maximum rate of pressure increase and the thermal load
were constructed from the results of various authors and are
Card 4/5 compared in Fig. 8. It will be noticed that the curves cross.

Natural Circulation During Variable Conditions   SOV/96-59-8-11/27

and this is attributed to the different relationships of
rate of pressure change as function of heat evolved adop-
ted by the different authors. It is particularly important
to establish limiting values of pressure increase at low
thermal loads when circulation is most likely to be upset.
Tests were made on boiler type PK-10p with both steady and
variable operating conditions. The results, compared in
Fig 9, show the useful circulation head at various rates of
steaming and it will be seen that circulation conditions
mainly depend on the rate of steaming and not on whether
that rate was reached suddenly or steadily. This point is
important when making calculations of circulation. There
are 9 figures and 10 literature references 9 of which are
Soviet and 1 German.

ASSOCIATION: MO TsKTI (Moscow Division of the Central Boiler
           Turbine Institute)

Card 5/5

KHAYKIN, I.D., inzhener. `

Investigation of circulation in a PK-10P boiler operating at
variable loads [with summary in English]. Teploenergetika 4
no.10:17-21 O '57.   (MLRA 10:9)

1. Moskovskoye otdeleniye Tsentral'nogo kotloturbinnogo instituta.
                         (Boilers)

RABEN, A.S., kand.med.nauk; KHAYKIN, I.G.

Role of trauma in the etiology of limited scleroderma. Vest.
derm. i ven. 33 no.3:77 My-Je '59.   (MIRA 12:9)

1. Iz kozhnogo otdeleniya 21-y polikliniki Oktyabr'skogo
rayzdravotdela Moskvy.
                    (SCLERODERMA)

KHAYKIN, I.L.,

KHAYKIN, I.L., inzhener.

The major construction project of the five-year plan.   Stroi.pred.
neft.prom.2 no.10:18-22 O '57.   (MIRA 10:10)
                        (Petroleum--Pipelines)

9(6)

AUTHOR: Khaykin, I. M., Engineer   SOV/119-59-9-9/19

TITLE: From Experience on the Operation of the Electronic Potentiometers
             of Type EPD-17

PERIODICAL: Priborostroyeniye, 1959, Nr 9, pp 20-21 (USSR)

ABSTRACT: The potentiometers of type EPD-17 were used for the control of
             annealing, quenching, and cementation processes under workshop
             conditions. Some failures in the operation of this apparatus
             made it desireable to find a way of eliminating the drawbacks
             of this potentiometer. The following facts were found: the
             weakness of this apparatus lies in the circuit consisting of the
             contacts of the slide block, the rheochord, and the rail. The
             slightest oxidation or contamination of the rheochord, rail or
             slide block renders the contacts unreliable, and disturbs the
             normal performance of the apparatus. In order to enable
             controlling of the condition of the slide block in the casing
             of the rheochord, a window 20 x 20 mm was inserted in the lid,
             which was very convenient for this purpose as well as for the
             exchanging of the slide block. In the series production of this
             apparatus a similar window is provided for. The authors
Card 1/2   developed a device, illustrated in a figure, for the automatic

From Experience on the Operation of the Electronic   SOV/119-!9-9-9/19
Potentiometers of Type EPD-17

        control of the correct condition of the contacts between slide
        block, rheochord, and rail of the potentiometer. The mode of
        operation of this apparatus is described in brief. A figure
        gives the diagram taken during normal performance of EPD-17.
        In the third figure a diagram is given which was made when the
        contact of this potentiometer between block, rheochord and rail
        were in bad condition. The slide block, regulating mechanism,
        and pointer did not return to their initial position, thus
        causing the furnace to be switched off, the process thereby
        coming to a standstill. The construction of the controlling
        device is shown in a further figure, and a short description
        of its mode of operation is given. This device was tested in the
        laboratory of the chief metallurgist of the factory. At present
        some of the apparatus of the type EPD fitted with this device
        are being safely operated under workshop conditions. There are
        4 figures.

Card 2/2

KHAYKIN, I.M. (Vologda)

"Economic geography of Poland" by IU.V.Ilinich. Reviewed by I.M.
Khaikin. Vest. Mosk.un. Ser. 5: Geog. 16 no.5:78 S-O '61.
(MIRA 14:9)
(Poland--Economic geography) (Ilinich, IU. V.)

KHAYKIN, I.M.

Long-awaited textbook ("Economic geography of foreign countries;
textbook for students." Reviewed by I.M.Khaikin). Vest.LGU 16
no.12:164-165 '61.   (MIRA 14:6)
                    (Geography, Economic)

KULIZADE, K.N.; KHAYKIN, I.Ye.

Effect of the type of motor load in pumping machines on power losses in oil-field electric networks. Za tekh.prog. 3 no.9:15-18 S '63. (MIRA 16:10)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.

AUTHOR: Khaykin, I.Ye.   90-58-7-4/8

TITLE: Some Problems of Standardizing Electric Power Consumption
            in Depth-Pumping Oil Extraction (Nekotoryye voprosy normiro-
            vaniya elektropotrebleniya pri dobyche nefti glubinnymi
            nasosami)

PERIODICAL:Energeticheskiy Byulleten', 1958, Nr 7, pp 18-20 (USSR)

ABSTRACT: K.N. Kulizade's formula and his critics' view are discussed.
            The author attacks the Orgenergoneft' method of determining
            the electric consumption norm as being unwieldy and inaccurate
            except over large oil regions, or deposits where individual
            deviations are cancelled out. The best method of determining
            the norm is based on a study of losses throughout the whole
            pumping complex. The author therefore approves Kulizade's
            and Shishkin's formulae, derived from factors representing
            these losses, calling, however, for a more accurate determina-
            tion of the value of these factors. There are 5 Soviet refer-
            ences.

Card 1/1   1. Electric power--Consumption   2. Electric power--Standards

SOV-90-58-9-1/8

AUTHOR: Kulizade, K.N.; Khaykin, I,Ye.

TILE: An Automatic Control for the Sychronous Motor of Pump
               Drives (Avtomatizirovanncye   upravleniye sinkhronnym dvi-
               gatelem privoda stanka-kachalki)

PERIODICAL: Energeticheskiy byulleten', 1958, Nr 9, pp 1-4 (USSR)

ABSTRACT: Kulizade found that the most efficient drive for depth pump-
               ing equipment on oil sites is a low-power synchronous elec-
               tric motor. V.L. Inosov recently developed a motor of
               this type with combined excitation and a solid rectifier,
               test models of which have been built by the Institut
               elektrotekhniki AN; UkrSSR (Institute of Electrical Engin-
               eering AS, UkrSSR) and the Bakinskiy elektromekhanicheskiy
               zavod (Baku Electrical Equipment Plant). A synchronous
               motor with mechanical rectification, developed by S.G.
               Tamantsev, is being produced at the Armelektrozavod in
               Yerevan. Neither of these two motors is fitted with an
               automatic control system, very necessary in oil-pumping
               work. The author lists the technical requirements for
               such a system. The Chair of Power Engineering for Oil Industry
Card 1/2   of the AzII imeni Azizbekov has developed a suitable sy-

SOV-90-58-9-1/8

An Automatic Control for the Synchronous Motor of Pump Drives

stem for the synchronous motor without mechanical excita-
tion, which allows for starting up the motor asynchronous-
ly with subsequent switching on of excitation. The first
test model of an automatic control set on these lines has
been constructed. The operation of this is described
(Fig. 1). A similar system also exists for use with a
motor employing combined excitation (Fig. 2). There are
2 circuit diagrams and 2 Soviet references.

1. Electric motors--Control systems   2. Pump drives--Effectiveness

Card 2/2

SOV/94-58-12-7/19

AUTHORS: Kulizade, K.N., Candidate of Technical Sciences
             Khaykin, I.Ye., Engineer

TITLE: Starting and Protective Equipment for an Electric
             Motor Driving an Oil-Well Pump with Compensation of
             Reactive Load (Puskozashchitnoye ustroystvo
             elektrodvigatelya stanka-kachalki s kompensatsiyey
             reaktivnoy nagruzki)

PERIODICAL: Promyshlennaya Energetika, 1958, Nr 12, pp 16-19 (USSR)

ABSTRACT: Plunger pumps installed in oil wells are usually driven
             by electric motors and are supplied by 6 kV/380 V
             transformers. The transformer substations usually have
             one or two transformers of 100 to 320 kVA. Usually one
             transformer substation supplies a number of pumping points
             through 380 V lines as illustrated in Fig 2. The total
             number of pumping installations receiving electric power
             from a single transformer substation is usually 20 to 40.
             The induction motors used for pump drive are usually of
             the squirrel cage rotor type of output 1 to 40 kW, the
             motors and starting equipment are installed out-of-doors.
             A feature of this drive is the occurrence of repeated
Card 1/3   short-time overloads and underloads with a cycle of

SOV/94-58-12-7/19

Starting and Protective Equipment for an Electric Motor Driving
an Oil-Well Pump with Compensation of Reactive Load

12 to 30 times a minute. Thus the motor operates under
a pulsating load varying as shown in Fig 3. In addition
to the main load variations there are others caused by
longitudinal oscillation of the operating rods. The
motor load may also be affected by friction in the
mechanism, by partial loading of the pump with oil and
so on. Because of these operating conditions the power
factor of the motors is usually lower than in normal
service. Values of 0.4 to 0.5 are common. One method
of improving the power factor of these motors is by
individual compensation with capacitors, which, as will
be seen from the data given in Table 1, can be very cheap.
Brief advice is given about the selection of capacitors
in respect of rated voltage and capacitance. Methods of
estimating the motor power consumption and the necessary
capacitor size are explained. A schematic circuit
diagram of a starting and protective arrangement for the
electric motor driving an oil well pump with power
factor correction by capacitors type KBG-MN is given in
Card 2/3   Fig 4. The equipment provided in the control panel is

SOV/94-58-12-7/19

Starting and Protective Equipment for an Electric Motor Driving
an Oil-Well Pump with Compensation of Reactive Load

briefly described. The equipment was tested in service
in Azerbaijan and the performance was very satisfactory.
The use of this type of equipment should be extended.
There are 4 figures.

ASSOCIATION: Azerbaydzhanskiy industrial'nyy institut imeni
Azizbekova (Azerbaijan Industrial Institute imeni
Azizbekov)

Card 3/3

14(5)
AUTHORS: Kulizade, K.N., Candidate of Technical Sciences, SOV/143-59-3-6/20
             Docent, Khaykin, I.Ye., Engineer

TITLE: Using Synchronous Motors Without Rotary Exciters
             for Driving Mechanisms With Pulsating Load at Oil
             Fields (Ob ispol'zovanii sinkhronnykh dvigateley
             bez mashinnogo vozbuditelya dlya privoda mekhanizmov
             s pul'siruyushchey nagruzkoy na neftyanykh promy-
             slakh)

ABSTRACT: The USSR Council of Ministers obliged all industrial
             installations to increase the power factor of their
             electrical equipment to 0.92-0.95. Using the latest
             engineering achievements and modern production methods,
             it was possible to increase the power factor of Azer-
             baydzhan oil fields gradually from 0.767 in 1951, to
             0.832 in 1954 and to 0.890 in 1957. This power fac-
             tor increase was achieved primarily with the applica-
Card 1/8   tion of high-voltage synchronous motors and high-volt-

SOV/143-59-3-6/20
Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

             age static capacitors. However, the situation is
             different with the low-voltage networks of the oil
             fields. Here, substations may be found working with
             a power factor of 0.5-0.6, having asynchronous motors
             of pump units as the principal load. These asynchro-
             nous motors drive the deep well pumping units, which
             are the basic means of oil field exploitation in the
             southern territories of the USSR and their applica-
             tion is still spreading. Presently, deep well pump
             motors require about 15-20% of the energy used on an
             oil field. Taking into consideration that the power
             factor of deep well pumping units varies from 0.4
             to 0.7 at the present time, the importance of the
             measures to be taken for its improvement, is obvious.
             The application of AOP electric motors for driving
             deep well pump units has completely justified itself
             from the viewpoint of good starting properties and
             drive reliability, yet their power factor is too low.
Card 2/8   The kinematic peculiarities of the pump mechanisms

SOV/143-59-3-6/20
Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

cause difficult cyclic load conditions for the driv-
ing motors. Analyzing the work of electric motors
under difficult cyclic load conditions, the authors
established the dependence of the power factor on the
load curve shape

$$\cos f_{\prime\prime} = \cos \angle_u \left(\frac{r_u}{\kappa} - f_u + 1 \right)$$

whereby r_u and $\cos \angle_{\div}$ correspond to the efficiency
factor and the power factor during operation at a
constant resistance moment, numerically equal to the
root-mean-square torque of a given cycle (the magnitu-
des may be determined by the motor characteristic,
depending on the degree of motor load), and k is the
load curve shape factor. Two methods may be used
for improving the power factor: a) centralized re-
active power compensation at the oil field substa-
tions, b) compensation of the reactive load at its
origin. The authors hold the latter method for more
practical and recommend the application of low-power

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SOV/143-59-3-6/20

Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

           synchronous motors for driving deep well pump units,
since they would also generate reactive power. The
authors explain the requirements for such motors.
The motors must be directly connected to the power
mains, being coupled with the pump mechanisms,
whereby a starting torque multiple of not less than
1.8-2.0 is required. In case of power failures, the
motors must start automatically after the required
voltage has been restored. The maximum torque mul-
tiple, providing stable operation under peak loads,
should not be smaller than 2.2-2.5. The motors
should run at 1,500 rpm, but 1,000 rpm should be
considered for future developments. The operating
voltage is 380 volts, but a possible increase to
660 volts should be taken into consideration. The
synchronous motors must have automatic excitation
control providing a rational application of the
compensating capability. The motors should be de-

Card 4/8   signed in such a way that they have a ventilated,

SOV/143-59-3-6/20
Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

        totally-enclosed housing, or at least a protected
        housing with moisture-proof insulation. The motors
        must have increased mechanical strength of their
        bearings and reinforced drive shaft ends. When
        selecting synchronous motors for deep well pumps,
        their capacities should be somewhat higher than
        required by the latter. This also requires a higher
        power factor at the transformer stations. The au-
        thors point out that Soviet plants produce very few
        low-voltage synchronous motors, which also explains
        their high manufacturing cost. Until now, no uni-
        fied series of low-power synchronous motors has been
        developed, mainly because of difficulties with the
        excitation system. Therefore it is suggested to re-
        place one or two asynchronous motors by synchronous
        motors for each power line leaving a transformer
        station and the excitation problem is to be overcome
        by using dry or mechanical rectifiers. The Kafedra
Card 5/8   energetiki neftyanoy promyshlennosti AzII imeni

SOV/143-59-3-6/20

Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

Azizbekova (Chair of Oil Industry Power Engineering
AzII imeni Azizbekov) conducted industr'al tests
with experimental synchronous motors having compound
excitation. The tests were performed on one of the
"Leninneft'" oil fields. The operationa. character-
istics of deep well pumps SKN3-915, SKN5-1812, SKN10-
3012, and the data of synchronous motors SG-4.5, MSA-
72/4 and SG-35, which were used for the first time
in USSR oil field practice for oil pumps. Based on
the available data, two experimental versions of 30
kw synchronous motors were produced by the Bakinskiy
elektromekhanicheskiy zavod (Baku Electromechanical
Plant), one with a 30 km dry rectifier and another
one with a 50 kw mechanical rectifier, which were
also tested on an "Leninneft'" oil field, having
a power factor of 0.68. At the present time, another
experimental motor is under construction at "Armelek-
trozavod" in Yerevan, which will have a power factor

Card 6/8   of 0.9, 1,000 rpm and a 50 kw mechanical rectifier.

SOV/143-59-3-6/20

Using Synchronous Motors Without Rotary Exciters for Driving
Mechanisms With Pulsating Load at Oil Fields

The authors point out that the aforementioned motors
had to be controlled manually and that the starting
operation had to be repeated even after brief power
interruptions. Therefore, a simplified automatic
control circuit for synchronous motors was developed
by the Chair of Oil Industry Power Engineering which
is shown in figure 4. With this arrangement, the
synchronous motor is started like an asynchronous
motor but with subsequent switching-on of the excita-
tion. This system meets a number of requirements:
It starts the motor when full voltage is available.
Starting and stopping is performed by one control
pulse. It starts the motor automatical after power
failures when the voltage returns. It protects the
motor of short circuits and lengthened asynchronous
operation. Finally, the authors stated that addi-
tional investigations are necessary for determining

Card 7/8   the most suitable type of motor for oil field use.

BABAYEV, M.A.; KHAYKIN, I.Ye.

Towards a reduction of expenditures on power in the
petroleum and gas industries. Izv. vys. ucheb. zav.; neft'
i gaz 7 no.11:50, 76 '64.   (MIRA 18:11)

KHAYKIN, Kh.T.

Primary tumor of the ureter. Vop. onk. 11 no.12:86-87 '65.
(MIRA 19:1)
1. Iz urologicheskogo otdeleniya (zav. - P. L. Filippov)
Otdelencheskoy bol'nitsy imeni Dzerzhinskogo Oktyabr'skoy
zheleznoy dorogi (glavnyy vrach - V.A. Pokrovskaya).

KHAYKIN, L.A.

Making plastic facings mounted on standard cast teeth. Stomatologiia
35 no.5:52 S-O '56   (MLRA 10:4)
        (DENTAL PROSTHESIS)

ANDREYEV, V.N.; VAYNBAUM, S.Ya.; POLYAKOV, V.A.; SAHAROV, S.V.;
     TRUSHKIN, P.G.; KHAYKIN, L.G.

     Structure of the eastern sector of the Zhiguli swell in
     connection with oil prospects. Geol. nefti i gaza 7 no.12:
     6-11 D '63.   (MIRA 17:8)

     1. Kuybyshevskiy nauchno-issledovatel'skiy institut neftyanoy
     promyshlennosti.

VILKOV, L. V., KHAYKIN, L. S., Moscow State University imeni M. V. Lomonosov
(Moskovskiy gosudarstvennyy universitet)

"Electron-Diffraction Study of the Structure of Dimethylamidodichlorophosphine
and Dimethylamidodichlorophosphine Oxide Molecules in the Vapor State"

Abstract: The configuration of the bonds of the nitrogen atom connected to the
phosphorus atom was determined in an electron-diffraction sector-microphoto-
metric investigation of dimethylamidodichlorophosphine and dimethylamidodi-
chlorophosphine oxide. It was found that under the influence of the phosphorus
atom, the configuration of the bonds of the nitrogen atom changes from essen-
tially pyramidal in $(CH_3)_3N$ (109°), planar in $(CH_3)_2NPCl_2$ (120°), and near
planar in $(CH_3)_2NPOCl_2$ (116°). A substantial increase in the length of the
P-Cl bond is observed in $(CH_3)_2NPCl_2$ in comparison with PCl_3. The length
of the P-N bond, determined for the first time, is substantially less than that
calculated from the covalent radii and according to the Shoemaker-Stevenson
equation. In $(CH_3)_2NPCl_2$, the basic rotational isomer takes an "unprofitable"
form from the standpoint of steric interactions. The stability of this form is
explained by the substantial electrostatic interactions of the Cl atoms and CH_3
groups. This article was presented by Academician M. I. Kabachnik on 11
October 1965. Orig. art. has: 1 figure and 3 tables. [JPRS: 38,970]

UDC: 541.63

Card 1/2

ACC NR: AP7005112

TOPIC TAGS: alkylphosphine, electron diffraction

SUB CODE: 07 / SUBM DATE: 21Sep65 / ORIG REF: 003 / OTH REF: 008

Card   2/2

KHAYKIN, L.Ye., inzh.

Concerning B.I. Filippov's article, "Preparation of engineers for
for assembly organizations." Mont.i spetr.rab. v stroi. 24 no.12:22
D '62.   (MIRA 15:12)
          (Building—Erecting work) (Filippov, B.I.)

GLOVINSKIY, Ya.G., inzh., red.; PAVLOV, S.M., inzh., red.;
        KHAYKIN, L.Ye., inzh., red.

        [Construction specifications and regulations] Stroitel'-
        nye normy i pravila. Moskva, Stroiizdat. Pt.3. Sec.G.
        ch.10.5.[Crushing, milling, sorting, enriching, and ag-
        glomerating equipment; regulations of production and ac-
        ceptance of work] Drobil'noe, razmol'noe, sortirovochnoe,
        obogatitel'noe i aglomeratsionnoe oborudovanie; pravila
        proizvodstva i priemki montazhnykh rabot (SNiP III-G.10.5-62)
        1964.   26 p.   (MIRA 17:7)

        1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po de-
        lam stroitel'stva. 2. Gosstroy SSSR (for Glovinskiy).
        3. Mezhduvedomstvennaya komissiya po peresmotru Stroitel'-
        nykh norm i pravil (for Pavlov). 4. Proyektno-konstruk-
        torskaya kontora Mekhanomontazhproyekt Gosudarstvennogo
        proizvodstvennogo komiteta po montazhnym i spetsial'nym
        stroitel'nym rabotam SSSR (for Khaykin).

KHAYKIN, M.; KHARCHENKO, L., red.; STEBLYANKO, T., tekhn. red.

    [Conversation on longevity]Razgovor o dolgoletii. Stavropol',
    Stavropol'skoe knizhnoe izd-vo, 1962. 104 p. (MIRA 16:1)
            (LONGEVITY)

Lazar

of the cavitation flow problem

skladky mekhaniki

number, conformal mapping,

solvability of the cavitation flow problem
a smooth arc of the Jukowski-
Les problèmes de représentation
des proues. Comm. Math. Helv.,   The
analyzed for infinite as well as strip flow
Fig. on the Enclosure) where the
The complex potential for the infinite

$$w = a$$

strip flow case

L 59640-65

AP5013383

A is defined by f(a) and the following

be given by

... be given by

... solution for

... is then shown

... fixed that the symmetric osmotic-symmetric type obstacle can be

KHAYKIN, M.I.

Solvability of the inverse mixed boundary value problem. Trudy
KAI no.68:11-20 '62.   (MIRA 16:10)

KHAYKIN, M.I.

Existence theorems for a class of inverse mixed boundary value problems in the theory of analytic functions. Trudy KAI no.64: 3-24 '61.   (MIRA 17:2)

KIRICHOK, Yu.G.; KLISHKO, B.K.; KUCHER, G.A.; KHAYKIN, M.I.;
        KOVACH, I.A.; DANILEYKO, K.Ya.

    Redesigning a skip hoist of the "Bol'shevik" Mine. Gor.
    zhur. no.10:68-72 O '61.   (MIRA 15:2)

    1. Energolaboratoriya tresta Dzerzhinskruda (for Kirichok,
    Klishko, Kucher, Khaykin). 2. Institut Krivbassproyekt
    (for Kovach, Danileyko).
                (Krivoy Rog Basin—Mine hoisting)

ACCESSION NR:AT4025521   8/2529/62/000/068/0011/0020

AUTHOR: Khaykin, M. I.

TITLE: The solvability of the inverse mixed boundary-value problem

SOURCE: Kazan. Aviatsionny*y institut. Trudy*, no. 68, 1962. Matematika i
mekhanika (Mathematics and mechanics), 11-20

TOPIC TAGS: boundary value problem, analytic function, existence theorem,
symmetrical inverse problem, unsymmetrical inverse problem, contour integration

ABSTRACT: In the earlier paper the author had proved a theorem on the existence
of solutions for a class of symmetric, mixed, inverse problems in the theory of
analytic functions. The present note is an addendum to this earlier paper. In it
are given, first, a formulation of the corresponding results for the unsymmetric
problem and one of its applications, and, second, the existence theorem of the
previous paper extended to the case when the known part of the desired contour
has a break in the middle. The author considered an equation of the form.

$$\frac{dl}{ds} = f(s; l)e^{-i\psi^{l\varphi}}\sin s, \quad 0 < s < \pi; \qquad (1)$$

Card   1/2

ACCESSION NR: AT4025321

where

$$T(e^{i\delta}) = \frac{1}{\pi} \int_0^\pi \Psi\{l(\phi)\} \frac{\sin s}{\cos\phi - \cos s}\, ds \qquad (2)$$

$T(e^{i\delta})$ are the values of the imaginary part of the function which is regular on the contour and real on the diameter and has $\Psi\{l(s)\}$ real parts when $\Im = e^{i\delta}$. The function $f(s; \lambda)$ is known and is continuous in s for $0 \leq s \leq \pi$. Under certain assumptions for $\Psi\{l\}$, the author proves that equation (1) has at least one solution. Other results are also obtained. Orig. art. has: 20 formulas.

ASSOCIATION: Aviatsionnyy institut, Kazan, (Kazan Aviation Institute)

SUBMITTED: 22Sep61   DATE ACQ: 17Apr64   ENCL: 00

SUB CODE: MA   NO REF SOV: 003   OTHER: 000

Card 2/2

KHAYKIN, M.M., inzh.; KRAVETS, P.V., master

Adjustment of MN 5106 magnetic gas analyzers to operation with oxygen. Energetik 11 no.6:13-14 Je '63.   (MIRA 16:7)

(Gases—Analysis)   (Boilers)

KHAYKIN, M.M., inzh.

Designing vinyl plastic underground pipes for strength. Stroi.
truboprov. 6 no.10:22-24 O '61.   (MIRA 14:10)
                        (Pipe, Plastic)

ALEKSANDROVICH, A.I., inzh.; MAKHOVER, Ye.S., inzh.; KHAYKIN, M.M., inzh.

The "Progress" flush tank. Gor.khoz.Mosk. 36 no.7:21-22 Jl
'62.   (MIRA 16:1)
                    (Water closets)

KHAYKIN, M.N.

Planning the manufacture of rubber hoses.   Kauch.i rez. 21 no.1:
40-44 Ja '62.
(Hose)   (MIRA 15:1)

KHAYKIN, M.M.; LYALINOV, A.N., inzh.

Manufacture of precast prestressed trusses with a span of
30 m. Bet. 1 zhel.-bet. 8 no.6:254-256 Je '62.   (MIRA 15:7)

1. Nachal'nik tekhnologo-konstruktorskogo otdela Proyektnogo
instituta No.1 Ministerstva stroitel'stva RSFSR (for Khaykin).
                    (Trusses)
                (Prestressed concrete)

KHAYKIN,

5151. MICROMETHOD FOR DETERMINATION OF TETRAETHYL LEAD IN ETHYL GASOLINE. Khaikin, MO (Zavodskaya Lab. (Factory Lab.), 1950, vol.16, 7-10; abstr. in chem. abstr., 1950, vol. 44, 6609. A method requiring but 5-10 ml of gasoline is as follows: Place a 10 ml sample into a centrifuge tube, add 10% Br inCCl$_4$ with stirring until recipitation is complete (2-3 drops extra), after 2-3 minutes dentrifuge, decant, take u the precipitate in 5-6 drops hot HNO$_3$, evaporate, cool, and weigh. The Et$_4$Pb is given by 97.6a/d where a is weight of precipitate and d is density of gasoline. Microscopic examination of Pb nitrate crystals obtained after evaporation confirmed homogeneity of the precipitate obtained in this method. Deviation from determinations by standard methods is less than 0.01 ml Et$_4$Po per kg of sample.

CA

METALLURGICAL LITERATURE CLASSIFICATION

KHAYKIN, M. R.

The purification of air and ammonia for a nitric acid apparatus. V. A. Klevke and M. R. Khaykin. J. Chem. Ind. (U.S.S.R.) 14, 1699-706(1937).—The chief impurities in the Dupont-type app. are machine oil and Fe₂O₃. The latter can be avoided by using Cr steel pipes.

Filter paper is best for removing particles from the gases before oxidation.   H. M. Leicester

METALLURGICAL LITERATURE CLASSIFICATION

KHEYKIN, M. R.

7

Carbide method for the rapid determination of moisture in boric acid. M. R. Khaikin and Z. F. Farkhullina. Zavodskaya Lab. 12, 1184(1947)(in Russian).—By decompn. of CuC₂ and measurement of the vol. of the C₂H₂ evolved, the moisture content, if less than 5%, can be detd. with an av. deficit of 0.36%, which empirical difference can be added to the result. The detn. requires 15-30 min. as against the 3-4 hrs. by the standard method of drying at 60° to const. wt.   N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

KHAYKIN, M. S.
A

Diffraction micromethod of measurement of the diffusion coefficient in liquids. M. S. Khaikin (Inst. Phys. Problems, Acad. Sci. U.S.S.R., Moscow). Zhur. Tekh. Fiz. 19, 1370–(1949).—The change of the refractive index n in diffusion is followed by photography of Fresnel diffraction spots along the edge of a rectangular trough; under a thickness of the liquid layer of 2 mm., at a wave length of 4358 A., the change of n from one spot to another is 2.18×10^{-4}. The slope of the middle linear portion of the conc. distribution curve is inversely proportional to the momentary dimension δ of a spot, and the diffusion coeff. $D = N^2 \delta^2 / 4\pi t$, where $t =$ time from the start of the diffusion, and $N =$ total no. of spots from one pure soln. to the other; N is given by $N = (n_1 - n_2)d/\lambda$, where n_1 and n_2 are the refractive indexes of the pure liquids, $d =$ thickness of the liquid layer. The method was tested in the diffusion of sucrose from a 6% aq. soln. into H_2O, with the result $D = 0.120(\pm 0.24\%)$ sq. cm./24 hrs. The coeff. of mutual diffusion of H_2O and D_2O, at 24.74°, was detd. to be $D = 6.82$ sq. cm./24 hrs. $(\pm 3\text{-}4\%)$.   N. Thon

KHAĬKIN, M. S.

Measurement of surface resistance of sup rconducting tin at a frequency of 9380 megacycles. M. S. Khaĭkin. Doklady Akad. Nauk, S.S.S.R. 75, 661–4(1950).—Two methods of measuring the Q of resonators are described, and the dependence of R/R_o on T is derived for the transition of Sn from a normal to a superconducting state at 9380 megacycles. The resonance properties of a hollow circular cylinder of chemically pure Sn were detd. by detg. the width of the resonance curve by varying the frequency; for $T = 4.2°K$. the Q was 80,000 ($\Delta f = 120$ kc.) which corresponds to a surface resistance $R_o = 0.01$ ohm. The max. Q measured accurately by this method was 1,500,000. Larger values were detd. by measuring the damping time of the natural oscillations of the resonator; thus, values of Q from 300,000 to 5,100,000 ($T = 1.05°K$.) were detd. with an accuracy of about 15%. The dependence of R/R_o on T (shown in a graph) was measured by both methods; it is about 0.02 at $T = 2°K$. and about 0.07 at $T = 3°K$.   Ellen H. Dunlap
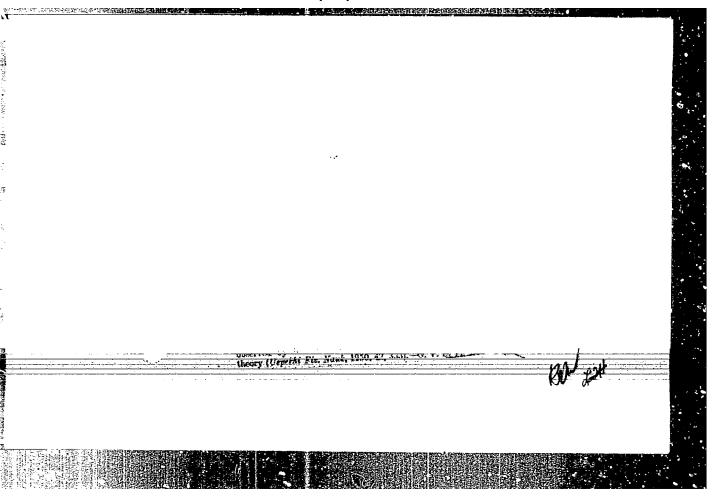
KHAYKIN, M. S.

KHAYKIN, M. S. - "Measurement of Surface Resistance of Superconducting Tin at
    a Frequency of 9,400 Megacycles."   Sub 18 May 52, Inst of Physical Problems
    imeni S. I. Vavilov.   (Dissertation for the Degree of Candidate in Physico-
    mathematical Sciences).

SO: Vechernaya Moskva January-December 1952

USSR.

/4 10.   The measurement of thickness coated
gas ex... helium   M. S. K...
film in Zh. eksper...
1952: In Russian

The measurement was carried...
9300 Vc/s at the temperat...
The measurements consisted of deter...
in the natural frequency of a...
filling it with gaseous helium...
0.000660 ; 0.000000   The...
was approx 0.4%.

theory (*Uspekhi Fiz. Nauk,* 1959, 47

USSR/Physics - Low temperature studies   FD-1895

Card 1/1   Pub. 146-15/21

Author   : Khaykin, M. S.

Title   : Investigations into the anisotropy of the surface resistance of tin at
               low temperatures

Periodical : Zhur. eksp. i teor. fiz. 28, 115-117, January 1955

Abstract   : The author attempts to explain the results of A. Pippard's experiments
               (Proc. Roy. Soc., A 203, 1950) on the assumption that the anisotropy of
               the surface conduction of tin at temperatures of liquid helium possesses
               a normal tensor character. He concludes that Pippard's assumption of the
               nontensor character is experimentally unfounded. He states that further
               experiments are necessary before one can hope to give a conclusive answer
               as to the character of the anisotropy. Four references.

Institution: Institute of Physical Problems, Academy of Sciences USSR

Submitted   : July 2, 1954

USSR/Physics - Light counter   FD-1826

Card 1/1   Pub 146-11/25

Author   : Rodionov, S. F.; Khaykin, M. S.; Shal'nikov, A. I.

Title   : Self-quenching light counters

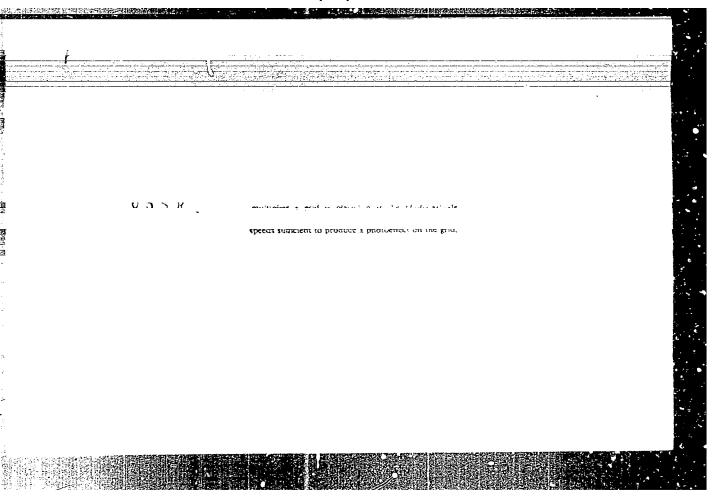Periodical : Zhur. eksp. i teor. fiz. 28, 223-227, February 1955

Abstract   : The authors describe self-quenching light counters. They present the special
              characteristics of counters with photocathodes made of platinum, aluminum,
              and magnesium. The described self-quenching photon counter possesses very
              stable counting properties and sufficient sensitivity convenient for mass
              production. The design and construction were carried out in the Institute
              of Physical Problems, Academy of Sciences USSR, by A. I. Shal'nikov and
              M. S. Khaykin; and the measurements of the spectral sensitivity of the
              counters were done in the Physical Institute, Leningrad State University,
              by S. F. Rodionov. Five references; e.g. S. F. Rodionov and A. I. Shal'-
              nikov, ibid. 5, 160, 1935.

Institution: Institute of Physical Problems, Academy of Sciences USSR

Submitted : March 31, 1954

U J S K

speeds sufficient to produce a photoeffect on the grid.

KHAYKIN, M.S.; BYKOV, V.P.

An attempt to detect the Raman effect in a superconductor. Zhur. eksp.
i teor. fiz. 30 no.1:191-192 Ja '56.   (MIRA 9:7)

1.Institut fizicheskikh problem Akademii nauk SSSR.
(Raman effect) (Electrons--Spectra)

KHAYKIN, M.S,

120-3-27/40

AUTHORS: Zhdanov, S.M., Makarov, V.M. and Khaykin, M.S.

TITLE: An Instrument for the Signalization of the Appearance of Weak Ultraviolet Light (Pribor dlya signalizatsii poyavleniya slabogo ul'trafioletovogo sveta)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, pp.93-96 (USSR)

ABSTRACT: The instrument responds to ultraviolet light in the range λ = 2000-3000 Å. The sensitive element is a photon counter CФK-1 and the electronic circuit is completely transistorised. The instrument consists of a sensitive element, an electronic circuit and a relay. The counter has a pure copper photocathode having a sharp cutoff at about 3000 Å. The envelope of the counter is made of quartz glass which is transparent to UV for $\lambda > 2000$ Å. Preliminary experiments have shown that the counter CФK-1 is highly sensitive to radiation from an open flame but has a negligible sensitivity to scattered visible light in a normally illuminated room. In these conditions the counting rate from visible light was about 200 counts per minute while the count rate due to a flame 25 mm high produced by a candle at a distance of 10 meters gave a counting rate of 6000 counts per minute, (Fig.1). The electronic circuit is designed so that it will

Card 1/2

120-3-27/40

An Instrument for the Signalization of the Appearance of Weak
Ultraviolet Light.

give a signal on the appearance of fire when the count rate
due to it is 30 times the background. The circuit consists
of an amplifier, pulseshaper, DC amplifier and a sensitivity
adjustment. The circuit is shown in Figs.2-4. The instru-
ment has been produced for operation either from the mains
or a battery. The size of the instrument is 225 x 120 x
65 mm^3 (Fig.5). The following persons collaborated:
P.P. Zaytsev, N.A.Selitrennikov and A.I.Shal'nikov. There
are 6 figures, no tables and 3 references, 2 of which are
Russian and 1 English.

ASSOCIATION: Central Scientific Research Institute of Fire Preven-
tion (Tsentral'nyy nauchno-issledovatel'skiy institut
protivopozharnoy oborony)

SUBMITTED: January 16, 1957.

AVAILABLE: Library of Congress.

Card 2/2   1. Light ultraviolet—Detection   2. Instrumentation—Operation

AUTHOR: Khaykin, M. S.   SOV/56-34-6-4/51

TITLE: The Surface Resistance of Superconducting Cadmium
               (Poverkhnostnoye soprotivleniye sverkhprovodyashchego kadmiya)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
               Vol 34, Nr 6, pp 1389-1397 (USSR)

ABSTRACT: This paper describes an apparatus for the measurement of
               the surface resistance of a metal by means of a specimen
               cooled in a magnetic way to $0,1^{\circ}$K. Ammonium ferric alum is
               used as refrigerating agent. This allows to reach the value
               $0,9$ for the criterion $h\nu/kT_c$. T_c denotes the critical
               temperature of the superconducting medium. The apparatus de-
               scribed in this paper has the following characteristic
               property: Only the specimen which is a part of the measuring
               resonator is cooled to the temperature of the alum, but the
               other parts of this apparatus maintain the temperature of
               the helium bath. First the author describes the apparatus
               and the electronic scheme which automatically records the
               width of the frequency characterit · and the changes of the
Card 1/3   proper frequency of the system. Th specimen used for the

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investigations was an eletrically polished cylindrical cadmium
crystal (purity 99,999 %) with a diameter of 0,9 mm. The
hexagonal axis of the crystal was parallel to the cylinder
axis. The author measured the change Δf of the width of the
frequency characteristic of the resonator and the shift of
its proper frequency caused by the transition of the specimen
from the superconducting state to the normal one (and in-
versely). From these quantities the active resistance R of
the specimen and the change dX of its reactive resistance
are determined. Measuring the surface resistance of the super-
conductor one may determine its dielectric constant ε and
the ratio σ/l where σ denotes the conductivity for normal
electrons and l their free path. A diagram shows the dependence
of ε on the relative temperature $t = T/T_c$. $T_c = 0,56°K$ is

the critical temperature of cadmium, it may be found by eva-
luating the results of the measurements of the total surface
resistance of the cadmium specimen. In the interval
$0,3 < t < 1$ the dependence $\varepsilon(t)$ may be described by the
simple empiric formula $-\varepsilon = 14,4(1 - t^4).10^8$ CGS . For δ
one finds $\delta = 13,4(1 - t^4)^{-1/2}.10^{-6}$ cm. The experimentally
found dependence of the ratio σ/l on the temperature is not

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in contradiction to the formula

$1 - \left[(\sigma/1)_s/(\sigma/1)_o\right] = C(1 - t^4)$. The insufficient exactness of the results does not allow more definite statements. The author thanks P. L. Kapitsa for his interest in this paper, A. I. Shal'nikov for his constant interest and some useful advice. The author thanks also G. S. Chernyshev and I. I. Loseva for the technical help. There are 7 figures and 17 references, 7 of which are Soviet.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR
(Institute of Physical Problems, AS USSR)

SUBMITTED: December 19, 1957

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S/081/62/000/004/062/087
B150/B138

AUTHORS: Khaykin, M. S., Derstuganov, G. V., Levkoyev, I. I., Kukhtin,
V. A., Shamil'skaya, D. B.

TITLE: The developing properties of some 4-aminopyrazolones-(5) and
their derivatives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 456, abstract
4L421 (Tr. Vses. n.-i. kinofotoinstituta, no. 37, 1960, 17-26)

TEXT: A synthesis is made of a series of derivatives of 4-aminopyrazolones-
5, and their photographic properties are investigated. Some of these
compounds, e.g. containing the methyl and free or substitution carboxyl
group in position 3, are active developing substances. The introduction of
the amino or oxy group into position 3 reduces the developing power. The
introduction of substitutes into the phenol nucleus, which is in position
1 of the pyrazolone, has less influence on photographic properties. It is
indicated that the photographic properties of 4-aminopyrazolones are
connected with the electronic character of the substituting groups.
[Abstracter's note: Complete translation.]
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KHAYKIN, M.S.

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S/056/60/039/01/25/029
B006/B063

AUTHOR: Khaykin, M. S.

TITLE: Oscillatory Dependence of the Surface Impedance of a Metal
               on a Weak Magnetic Field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki,
               1960, Vol. 39, No. 1(7), pp. 212-214

TEXT: Theoretical investigations (Refs. 1 and 2) have shown that the
surface impedance of a metal located in a weak, constant, magnetic field
changes monotcnically with increasing field strength. This observation
was experimentally confirmed (Ref. 3). However, some results were obtained
which indicate that this dependence is not monotonic in the case of weak
fields. The author of the present paper measured the field dependence of
surface impedance at 9400 Mc/sec on single crystals of high-purity tin
(impurity concentration of $< 6.10^{-5}$%), as well as on Cd and In $(< 2.10^{-3}$%
impurities) (cf. Refs. 4 and 5). Fig. 1 shows the measured field dependence
of the logarithm of the derivative of surface impedance with respect to

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a Metal on a Weak Magnetic Field   B006/B063

the field $\zeta(H)$, where $\zeta = X^{-1} \partial X / \partial H$. The constant field was parallel
to the high-frequency field H_ω. A rotation of H in the plane of the

specimen led to a decrease in the oscillation amplitudes of $\zeta(H)$ and shift-
ed them toward higher field strengths. No oscillation occurred any longer
with an approach to the state $H \perp H_\omega$. It was found that ζ depended on the

projection of H onto H_ω. An examination of the periodicity of these
oscillations showed that the following ratio held for the first four
H_n-values of tin: $H_{n+1}/H_n = 1.6 \pm 0.1$. For cadmium and, similarly, for

indium this ratio was determined to be 2.1 ± 0.2 (H_n is the absolute field

value for which $\zeta(H_n) = 0$; n is an ordinal number). Fig. 2 shows the

$\zeta(H)$ functions for tin at $H_\omega \| H$. The experiments were performed with

specimens having a temperature of $3.8^\circ K$. When they were heated to $4.2^\circ K$,
the oscillation amplitude was lowered by about one-half, and the value of
H_n was slightly increased. No oscillations were visible at $\sim 10^\circ K$. This

effect disappeared when the specimen passed over into the superconductive

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of a Metal on a Weak Magnetic Field   B006/B063

state. Moreover, it was anisotropic and practically independent of H_ω:
Both the position and the amplitude of the oscillations were found to be
independent of the crystallographical orientation. The nature of the effect,
however, was maintained. Furthermore, it depended on the degree of purity
of the specimen, and the amplitude decreased with an increase in the amount
of impurities. Commercially pure polycrystalline copper showed no effect.
The physical nature of this effect has not been clarified so far. Finally,
the author thanks P. L. Kapitsa and A. I. Shal'nikov for their interest
in this work, as well as G. S. Chernyshev for his assistance. There are
2 figures and 5 Soviet references.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR
               (Institute of Physical Problems of the Academy of Sciences,
               USSR)

SUBMITTED: April 30, 1960

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KHAYKIN, M.S.

Cyclotron resonance of tin. Zhur. eksp. i teor. fiz. 39 no.2:513-
516 Ag '60.   (MIRA 13:9)

1. Institut fizicheskikh problem Akademii nauk SSSR.
      (Cyclotron resonance)   (Tin)